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**Research Article** 

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## Trichomoniasis, A Sexually Transmitted Parasitic Disease in Women Attending a Tertiary Hospital in Southeastern Nigeria

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#### Abstract

Trichomoniasis is the most prevalence sexually transmitted parasitic disease in the world. A prospective study was conducted to determine the prevalence of *Trichomonas vaginalis* infection among women attending Nnamdi Azikiwe University Teaching Hospital Nnewi, Nigeria. High vaginal swabs were collected from 286 women who were in their child bearing period (18-45 years) and examined by direct wet microscopy. The overall prevalence of *Trichomonas vaginalis* infection was 3.8%. The highest prevalence was observed among the 26-33-year age group (5.0%) and no infection was seen among women aged 41-45-year-old. The prevalence rate was 3.9% among married and 3.7% among unmarried women (P>0.05). *Trichomonas vaginalis* infection was more in women who had multiple sex partners (4.5%) than those who maintained only one partner (1.5%) (P<0.05). Women whose income corresponded to the national minimum wage was significantly infected with *Trichomonas vaginalis* (5.5%) than the women who earned higher (1.65) (P<0.05). Occurrence of *Trichomonas vaginalis* infection among non-pregnant women was 4.3% and 3.3% in pregnant ones (P>0.05). Trichomoniasis was highest at the first trimester of pregnancy (5.0%) and no infection was observed at the third trimester. Prevalence of *Trichomonas vaginalis* infection in Nnewi is low. Women with low incomes and multiple sex partners were likely to have Trichomoniasis.

**Keywords:** Nigeria; Sexually transmitted parasitic disease Trichomonisis; Women; Tertiary hospital

#### Introduction

Sexually transmitted parasite diseases (STPD) are infectious diseases that are transmitted through unprotected sex which could potentially predispose men and women to different reproductive health issues [1]. Trichomoniasis, caused by *Trichomonas vaginalis* is the most prevalent sexually transmitted parasitic disease in the world with an annual incidence of 276.4 million cases, making it more prevalent than gonorrhea and Chlamydia [2,3].

Its symptoms are commonly seen in women than in man [4]. In women, the symptoms may include frothy-greenish foulsmelling vaginal discharge, vulvo-vaginal irritation, postcoital bleeding, frequency in micturition, dysuria and lower abdominal pains [5,6]. *Trichomonas vaginalis* is mainly transmitted through sexual contact but could be contracted through sharing of wet towels and under wears with infected individuals [7].

Incidence rates can vary according to several factors, such as older age, sexual activity, multiple sexual partners, co-infection with other sexually transmitted disease, methods of diagnosis, poor personal hygiene and socio-economic status [5,8]. Trichomoniais have been diagnosed through various methods such as *Trichomonas vaginalis* culture, direct microscopic examination of the vaginal fluid, cytopathology or a combination of these methods [9]. In Nigeria, despite the endemicity of parasite diseases, only Trichomoniasis is sexually transmitted. Studies in Nigeria show that prevalence of Trichomoniasis across the country range from

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Citation: Ndubuisi NO, Amara UE and Valentine UN (2019) Trichomoniasis, A Sexually Transmitted Parasitic Disease in Women Attending a Tertiary Hospital in Southeastern Nigeria. Emerg Infect Dis Diag J: EIDDJ-100004 0-51.8% [1]. Majority of the studies were carried out on pregnant in different geo-political zones. Due to its high disease burden, we aimed to determine the prevalence Trichomoniasis in women attending clinics in a Nigeria hospital.

### **Materials and Methods**

Nnamdi Azikiwe University Teaching Hospital (NAUTH), located in the urban area of Nnewi, Anambra South local council, Nigeria is a reference centre for health care in Anambra State. It has many specialist clinicians in Obstetrics and Gynecology.

**Types of Study:** A cross- sectional study was conducted to analyze the prevalence of *Trichomonas vaginalis* among women treated at Obstetrics and Gynecology (O&G) Department of NAUTH, Nnewi.

**Study participants:** A total of 286 women in their child bearing period (18-45 years) agreed to participate in the study. These women complained of vaginal discharge with itching, burning sensation or both and other gynecological manifestations suggesting Trichomoniasis.

**Methods:** High vaginal swab (HVS) was collected from each participant using the method described [10]. A vaginal fluid was collected using a sterile swab stick (Evepon, Nigeria) aided by sterile speculum. A wet mount preparation was examined and *Trichomonas vaginalis* identified by its characteristics wobbling and rotation motion.

**Statistical analysis:** Statistical analyses for data obtained were performed using chi-square test and descriptive statistics. A p-value of <0.05 was considered significant

**Ethical approval:** The Ethics and Research Committee of the Hospital approved this study. Informed consent was sought from participants. Patients voluntarily consented to participate and agreed to fill a structured self -administered questionnaire.

#### Results

A total of 11 (3.8%) women were infected by *Trichomonas vaginalis* infection. Of these, the highest prevalence was observed among the 26-33-year age group (5.0%). No infection was observed among women aged between 41-45 years. Regarding their marital status, prevalence of *Trichomonas vaginalis* infection was 3.9% in married women and 3.7% in unmarried women. Marital status was not significantly associated with Trichomoniasis (P>0.05) (Table 1). Women who had multiple sex partners were more infected (4.5%) than those who maintained only one partner (1.5%) (P<0.05). As presented in **Table 1**, women whose monthly income corresponded to the national minimum wage were more likely to be infected with *Trichomonas vaginalis* (5.5%) than women who earned a higher income (1.6%) (P<0.05).

Occurrence of *Trichomonas vaginalis* infection among nonpregnant and pregnant women was similar; 4.3% vs. 3.3% (P>0.05). According to their trimester of pregnancy, Trichomoniasis was observed highest at the first trimester (5.0%) and none at the third trimester as presented in **Table 2**.

Variable				
Age (yr)	No Examined	T.V detected (%)		
18-25	76	3 (3.9)		
26-33	117	6 (5.1)		
34-41	67	2 (3.0)		
41-45	26	0 (0)		
Total	-	11 (3.8)		
Marital status	-	-		
Married	179	7 (3.9)		
Unmarried	107	4 (3.7)		
Multiple sex partners				
Yes	221	10 (4.5)		
No	65	1 (1.5)		
Monthly income	-	-		
Minimum wage	164	9 (5.5)		
Above Minimum wage	122	2 (1.6)		
<b>Note:</b> NAUTH Nnamdi Azikiwe University Teaching Hospital T.v <i>Trichomonas vaginalis</i> .				

**Table 1:** Sociodemographic characteristics of women infected by

 *Trichomonas vaginalis* at NAUTH, Nnewi.

Status of women	No. examined	Trichomonas vaginalis detected (%)	
Non- pregnant	163	-	7 (4.3)
Pregnant	-	123	-
Gestation age of Pregnancy	-	-	-
First trimester	60	-	3 (5.0)
Second trimester	48	-	1 (2.1)
Third trimester	15	-	0 (0)

 Table 2: Distribution of Trichomoniasis among women attending hospital at NAUTH, Nnewi.

### Discussion

The *Trichomonas vaginalis* infection rate of 3.8% was observed in our study. This is similar to 3.3% reported in Lagos, Nigeria [11] and 3.68% in Brazil [12]. Our finding however, is lower than 21.5% and15.0% respectively reported in Nigeria and 34.0% in Kenya [11,13,14]. These rates were calculated based on direct examination of fresh preparation of vaginal fluid. The

Citation: Ndubuisi NO, Amara UE and Valentine UN (2019) Trichomoniasis, A Sexually Transmitted Parasitic Disease in Women Attending a Tertiary Hospital in Southeastern Nigeria. Emerg Infect Dis Diag J: EIDDJ-100004 improvement in this current study could be attributed to the practice of good personal hygiene and adherence to consistent healthy living of these women as instructed at every antenatal clinic and advised at consultations in the Hospital.

It has been suggested that *Trichomonas vaginalis* infection is age-tied [15]. The prevalence of *Trichomonas vaginalis* infection was highest in women aged between 26years and 33years (5.1%). This age group has been associated with higher sexual activity. There is a general consensus that the prevalence of sexually transmitted disease including Trichomoniasis is the highest among 11-45-year age group [16-18].

In our study, the prevalence of Trichomoniasis among pregnant women (3.3%) was similar to that observed in non-pregnant women (4.3%). This result matches the study conducted in Brazil [9] and Onitsha [19]. This high prevalence of Trichomoniasis among pregnant women compared with non-pregnant women might be explained by hormonal changes and/ or the increase in vaginal pH that occurs during pregnancy [20]. This increase facilitates protozoan colonization and it has been established that alkaline pH above 4.5 is associated with the presence of Trichomoniasis [21].

According to their marital status, married women had an infection rate of 3.9% which is similar to 3.7% in unmarried women. This result agrees with previous findings [18]. Marital status was therefore not significantly related to Trichomoniasis. Unmarried women are believed to be unattached and thus free to indulge in more sexual activities [22] but, on the contrary, our study did not show that pattern.

Trichomoniasis was seen most among women in their first trimester of pregnancy [5.0%]. Gestational age has been observed to have a significant influence on the prevalence of Trichomoniasis, with those in the first trimester presenting with the highest prevalence followed by the second trimester [22-23]. The frequency of sexual intercourse decrease as pregnancy advances [22]. This could explain why no *Trichomonas vaginalis* infection was recorded among women in the third trimester of pregnancy. This is similar to a previous result [24].

Women whose income was below the national minimum wage presented a significantly higher *Trichomonas vaginalis* infection rate (5.5%). This is in line with previous findings [8] and implies a socioeconomic fragility that represents a risk factor for Trichomoniasis [9]. Trichomoniais was observed more in women who have multiple sex partners. Similarly, other workers had recorded higher prevalence among persons with multiple sex partners and other venerable diseases [19,25].

#### Conclusion

The overall prevalence of *Trichomonas vaginalis* infection was 3.8%. Participants with low income and multiple sex partners were mostly infected with Trichomoniasis. Marital and pregnancy status of the women at Nnewi were not associate with Trichomoniasis.

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